What is claimed is:

1. For use in a system including a power supply that provides a supply voltage to a laser driver, and a laser diode that receives a drive current from the laser driver, a method for reducing power consumption, comprising:

(a) monitoring a voltage drop across the laser diode; and

(b) adjusting the supply voltage, based at least in part on the monitored voltage drop across the laser diode.

2. The method of claim 1, wherein step (a) includes using a high impedance filter to produce a feedback path that enables the monitoring of the voltage drop across the laser diode.

3. The method of claim 1, wherein step (a) includes sampling the voltage drop across the laser diode.

4. The method of claim 1, wherein step (b) includes:

(b.1) increasing the supply voltage when the monitored voltage drop across the laser diode increases; and

(b.2) decreasing the supply voltage when the monitored voltage drop across the laser diode decreases.

5. The method of claim 1, wherein step (b) includes:

(b.1) determining a desired supply voltage, based on at least both the monitored voltage drop across the laser diode and a laser driver headroom voltage, the laser driver headroom voltage being at least a minimal additional voltage necessary to operate the laser driver; and

(b.2) adjusting the supply voltage to generally track the desired supply voltage.

6. The method of claim 5, wherein the desired supply voltage, determined at step (b.1), is substantially equal to the monitored voltage drop plus the laser driver headroom voltage.

7. The method of claim 6, wherein the laser driver headroom voltage is treated as a constant.

8. The method of claim 6, wherein the laser driver headroom voltage varies.

9. The method of claim 6, wherein step (b.1) includes:

determining a peak monitored voltage drop across the laser diode over a period of time; and

determining the desired supply voltage by adding the peak monitored voltage drop to the laser driver headroom voltage.

10. A laser driver adapted to drive a laser diode, comprising:

a sampler to sample a voltage drop across the laser diode; and

a controller to determine desired supply voltage information based on at least both a laser driver headroom voltage and voltage samples produced by the sampler;

wherein the controller also provides the desired supply voltage information to

either a power supply that produces an actual supply voltage used to power the laser driver, or to a further controller associated with the power supply.

11. A system, comprising:

a laser driver adapted to drive a laser diode;

a sampler to sample a voltage drop across the laser diode; and

a controller to adjust a supply voltage, used to power the laser driver, based at least in part on voltage drop samples produced by the sampler.

12. A system, comprising:

a laser driver adapted to drive a laser diode;

a sampler to sample a voltage drop across the laser diode; and

a controller to adjust a supply voltage, used to power the laser driver, based on at least both a laser driver headroom voltage and voltage drop samples produced by the sampler.

13. The system of claim 12, wherein the laser driver headroom voltage comprises a predetermined estimate.

14. The system of claim 12, wherein the laser driver headroom voltage is adjusted in real time.

15. A system, comprising:

a laser driver adapted to drive a laser diode;

means for monitoring a voltage drop across the laser diode; and

means for adjusting a supply voltage, used to power the laser driver, based at least in part on the monitored voltage drop across the laser diode.

16. The system of claim 15, further comprising a means for monitoring a laser driver headroom voltage.

17. The system of claim 16, wherein the means for adjusting adjusts the supply voltage based on at least both the monitored voltage drop and the monitored laser driver headroom voltage.

18. A system, comprising:

a laser driver adapted to drive a laser diode; and

a controller to monitor a voltage drop across the laser diode;

wherein the controller also adjusts a supply voltage, which powers the laser driver, based at least in part on the monitored voltage drop across the laser diode.

19. The system of claim 18, further comprising a high impedance filter connected between the laser diode and the controller, to provide a feedback path that enables the controller to monitor the voltage drop across the laser diode.

20. The system of claim 18, wherein the controller also adjusts the supply voltage based at least in part on a laser driver headroom voltage, which is at least a minimal additional voltage necessary to operate the laser driver.

21. The system of claim 19, wherein the laser driver headroom voltage is treated as a constant.

22. The system of claim 19, wherein the laser driver headroom voltage varies.